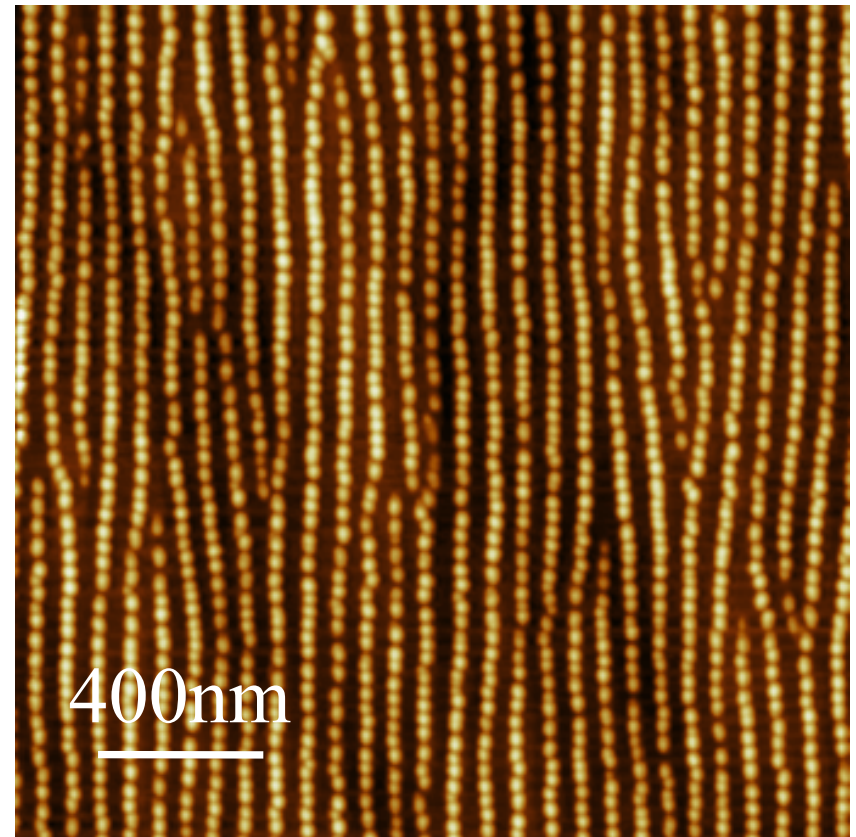


# In-Situ Scanning Tunnel Microscope For Photoluminescence Studies

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Using molecular beam epitaxy (MBE) and scanning tunneling microscopy (STM) we have been able to grow and study the photoluminescence (PL) and transport behavior of chains of quantum dots that can act as optical and electrical interconnects between quantum dot devices. The STM picture here of three dimensional stacks of quantum dots demonstrates the new capability to produce these quantum dot interconnects.

*See Yu. I. Mazur, W.Q.Ma, Z. M. Wang, G. J. Salamo, and M. Xiao, "InGaAs/GaAs three-dimensionally-ordered array of quantum dots" **Appl. Phys. Lett.** 83, 987 (2003).*



**Continuous Chains of Quantum Dots that can find application as optical and electrical interconnects between Quantum Dot devices**